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General methods of test for pigments and extenders —

Part 2: Determination of matter volatile at 105 °C

Méthodes générales d'essai des pigments et matières de charge — Partie 2: Détermination de la teneur en matière volatile à 105 °C

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee *[or Project Committee]* ISO/TC 256, *Pigments, dyestuffs and extenders*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 298, *Pigments and extenders*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 787-2:1981), which has been technically revised. The main changes compared to the previous edition are as follows:

— the normative references have been updated, and ISO 18451-1 has been added;

— Clause 3, Terms and definitions, has been added;

— the formula for calculating the test result has been modified;

— the text has been editorially revised.

A list of all parts in the ISO 787 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

General methods of test for pigments and extenders —

Part 2:
Determination of matter volatile at 105 °C

1 Scope

This document specifies a general method of test for determining the mass fraction in percent of matter volatile at a temperature of 105 °C in a sample of pigment or extender.

This method is applicable to pigments and extenders that are stable at 105 °C.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 15528, *Paints, varnishes and raw materials for paints and varnishes — Sampling*

ISO 18451-1, *Pigments, dyestuffs and extenders — Terminology — Part 1: General terms*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 18451-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Apparatus

4.1 **Weighing bottle**, squat form, wide-mouthed, with ground glass stopper.

4.2 **Oven**, capable of maintaining the temperature at (105 ± 2) °C.

4.3 **Balance**, accurate to 0,1 mg.

4.4 **Desiccator**, containing an efficient desiccant.

5 Sampling

Take a representative sample of the product under test, in accordance with ISO 15528.

6 Procedure

6.1 Number of determinations

Carry out the determination in duplicate.

6.2 Test portion

Heat the weighing bottle (4.1), with the stopper removed, in the oven (4.2) at (105 ± 2) °C for 2 h. Allow to cool in the desiccator (4.4), insert the stopper and weigh to the nearest 1 mg.

Spread (10 ± 1) g of the sample in a uniform layer on the bottom of the weighing bottle, insert the stopper and weigh to the nearest 1 mg.

It can be necessary to reduce the mass of the test portion for pigments and extenders with a high bulk volume. The use of a test portion smaller than that specified shall be stated in the test report.

6.3 Determination

Heat the weighing bottle and contents, with the stopper removed, in the oven (4.2) at (105 ± 2) °C for a minimum of 1 h. Allow to cool in the desiccator (4.4), insert the stopper and weigh to the nearest 1 mg. Repeat the heating for at least 30 min, allow to cool in the desiccator (4.4), insert the stopper and again weigh to the nearest 1 mg. Repeat the procedure until two successive results differ by no more than 5 mg. Record the lower mass.

If the results of the two determinations differ by more than 10 % of the higher value, repeat the whole procedure in this clause.

7 Expression of results

The matter volatile at 105 °C is calculated as the mass fraction ω in percent by Formula (1):

$$\omega = \frac{m_1 - m_2}{m_1 - m_0} \times 100 \quad (1)$$

Where,

ω is the matter volatile at 105 °C of the test portion, as mass fraction in percent;

m_1 is the mass, in grams, of the weighing bottle and the test portion;

m_2 is the mass, in grams, of the weighing bottle and the residue;

m_0 is the mass, in grams, of the weighing bottle.

Calculate the mean of the two determinations, if they do not differ by more than 10 % of the higher value and report the result to the nearest 0,1 %. Report results between 0 % and 0,1 % as “less than 0,1 %”.

8 Test report

The test report shall contain at least the following information:

a) all details necessary to identify the product tested;

b) a reference to this document, i.e. ISO 787-2:2021;

c) the result of the test as indicated in Clause 7;

d) any deviation, by agreement or otherwise, from the procedure specified, particularly another test temperature;

e) any unusual features (anomalies) observed during the test;

f) the date of the test.